

AMS-02 WEIGHT

(IN ORBITER PAYLOAD BAY AND ON ISS TRUSS ONLY)

| AMS EXPERIMENT HARDWARE | | April 11, 2003 | |
|-------------------------|---|----------------|-------|
| | | (LBS) | (KG) |
| | | | |
| 1 | ANTICOINCIDENCE COUNTER (ACC) (w/ STRUCTURE TO VC) | 117 | 53 |
| 2 | TRACKER (w/ STRUCTURE TO VC, TTCS EVAPORATOR, & LASER ALIGNMENT SYSTEM) | 438 | 198.5 |
| 3 | TIME OF FLIGHT (TOF) (w/ BOTH UPPER & LOWER SUPPORT STRUCTURES) | 525 | 238 |
| 4 | TRANSITION RADIATION DETECTOR (TRD) (WITH SUPPORT STRUCTURE) | 723 | 328 |
| 5 | TRD GAS SUPPLY SYSTEM (WITH HOUSING, 3 TANKS, PLUMBING, VALVES, CONTROLLER, AND INTERNAL & EXTERNAL MOUNTING BRACKETS) | 258 | 117 |
| 6 | RING IMAGING CHERENKOV COUNTER (RICH) (W/MOUNTING BRACKETS TO LOWER USS-02) | 406 | 184 |
| 7 | ELECTROMAGNETIC CALORIMETER (ECAL) (W/ MOUNTING BRACKETS TO LOWER USS-02) | 1407 | 638 |
| 8 | ALL AVIONICS CRATES (WITH STAR TRACKER, CABLES BETWEEN CRATES, CONNECTORS, CLAMPS, MISC. MOUNTING BRACKETS, CRATE SUPPORT STRUCTURES NOT INCLUDED WITH TCS, ETC. CAB & CCEB ARE INCLUDED WITH THE CRYOMAGNET WEIGHT; ALL EXPERIMENT COMPONENT CABLE WEIGHT INCLUDED IN COMPONENT WEIGHTS) | 1014 | 460 |
| 9 | CRYOMAGNET SYSTEM (INCLUDES MAGNET & STRUCTURE, SFHe TANK, CRYOSYSTEM, SUSPENSION, ALL VC PORT CONNECTIONS/COVERS, VENT PUMP, <u>ALL</u> INTERNAL & EXTERNAL PLUMBING, CRYOCOOLERS WITH MOUNTING BRACKETS, RELIEF DEVICES, "HELIOMATIC"/PNEUMATIC VALVE SUPPLY TANK, CRYOMAGNET AVIONICS BOX (CAB) WITH BATTERY/UPS, CRYOCOOLER ELECTRONICS BOX (CCEB), CLAMP RECTIFIERS & MOUNTING HARDWARE, ETC.) | 5196 | 2357 |
| 10 | THERMAL CONTROL SYSTEM (TCS) (INCLUDES HEAT PIPES, LOOP HEAT PIPES, PUMPS, RADIATORS, SUPPORT STRUCTURES, CONDENSERS, PRE-HEATERS, CO2 RESERVOIR, VALVES, ETC. ALSO INCLUDES SOME SUPPORT STRUCTURE THAT WILL CARRY ELECTRONICS CRATES.) | 686 | 311 |
| 11 | CONTINGENCY | 213 | 96.5 |
| 12 | AMS EXPERIMENT HARDWARE TOTAL: | 10981 | 4981 |

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| SPACE SHUTTLE INTEGRATION HARDWARE | | April 11, 2003 | |
|------------------------------------|---|----------------|------|
| | | (LBS) | (KG) |
| 13 | UNIQUE SUPPORT STRUCTURE - 02 (CARRIES 14,809 lbs on STS) | 1592 | 722 |
| 14 | CRYOMAGNET VACUUM CASE (CARRIES 14,809 lbs on STS) | 1587 | 720 |
| 15 | BRACKETS, MISC. FASTENERS & HARDWARE, SAFETY WIRE | 23 | 10 |
| 16 | THERMAL BLANKETS (TRD SIDES, ECAL BOTTOM, RICH SIDES, & +/-Y SIDES ON VACUUM CASE - NO OTHER BLANKETS ARE INCLUDED IN THIS WEIGHT) | 35 | 16 |
| 17 | SHUTTLE INTEGRATION HARDWARE CONTINGENCY | 0 | 0 |
| 19 | SHUTTLE INTEGRATION HARDWARE TOTAL: | 3238 | 1469 |
| ISS INTEGRATION HARDWARE | | (LBS) | (KG) |
| 20 | ISS PAS/UMA INTERFACE HARDWARE WITH CABLES (CARRIES 14,809 lbs on ISS) | 225 | 102 |
| 21 | GRAPPLE FIXTURES (1 FRGF & 1 PVGF), BRACKETS, & CABLE TO EBCS | 131 | 59 |
| 22 | MICROMETEORITE/ORBITAL DEBRIS (M/OD) SHIELDS & SUPPORTS | 102 | 46 |
| 23 | EVA CONNECTOR PANEL, SCUFF PLATES & BRACKETS | 55 | 25 |
| 24 | PAYLOAD DISCONNECT ASSEMBLY (PDA) FOR THE REMOTELY OPERATED ELECTRICAL UMBILICAL (ROEU) WITH MOUNTING BRACKETS, CABLES & CONNECTORS | 36 | 16 |
| 25 | EVA HANDRAILS & PORTABLE FOOT RESTRAINT (PFR) INTERFACE | 16 | 7 |
| 26 | EXTERNAL BERTHING CAMERA SYSTEM (EBCS), MOUNTING BRACKETS & HEATER CABLES | 25 | 11 |
| 27 | ISS INTEGRATION HARDWARE CONTINGENCY | 0 | 0 |
| 28 | ISS INTEGRATION HARDWARE TOTAL: | 590 | 268 |

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| TOTAL WEIGHT SUMMARY | | April 11, 2003 | |
|----------------------|---|----------------|------|
| | | (LBS) | (KG) |
| | | | |
| 29 | AMS EXPERIMENT HARDWARE TOTAL: | 10981 | 4981 |
| 30 | SHUTTLE INTEGRATION HARDWARE TOTAL: | 3238 | 1469 |
| 31 | TOTAL EXPERIMENT & SHUTTLE INTEGRATION HARDWARE WEIGHT: | 14219 | 6450 |
| | | | |
| 32 | ISS INTEGRATION HARDWARE TOTAL: | 590 | 268 |
| 33 | TOTAL PAYLOAD WEIGHT: | 14809 | 6717 |
| 34 | TOTAL CONTROL WEIGHT: | 14809 | 6717 |
| 35 | TOTAL OVER/UNDER CONTROL WEIGHT: | 0 | 0 |